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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/767,885 | 01/24/2001 | Kimio Inoue | 202182US3 | 2548 |

22850 7590 12/11/2002

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EXAMINER

SORKIN, DAVID L

ART UNIT

PAPER NUMBER

1723

DATE MAILED: 12/11/2002

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/767,885

Applicant(s)

INOUE, KIMIO

Examiner

David L. Sorkin

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. As explained in the previous office action, on page 14, line 13, it appears the degree symbol ($^{\circ}$) and zero (0) have been confused. On page 14, line 13, "angle of 300" should read - - angle of 30° - -.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-3 and 5-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. In claim 1, there is insufficient antecedent basis for "each said screw set". The claim recites "A screw set", not a plurality of screw sets.

5. It is unclear whether the "extruder" is part of the claimed structure. While the preamble of claim 1 recites "in a twin extruder", it is unclear if the claim is directed to a combination screw set and extruder body or a screw set subcombination intended to be used in an extruder body. The scope of the claims is further confused by the preambles of the claims which depend from claim 1, claims 2, 3 and 5-9, which begin "The screw set for a twin-screw extruder".

6. In claims 1 and 10, it is unclear what "having a constant sectional shape in the axial direction" means. Specially, it is unclear which (if any) of the following possibilities is intended. Does the phrase mean that the sectional is an axial section and that it is

Art Unit: 1723

the same throughout the kneading rotor, or does it mean that the section is not necessarily axial (perhaps a cross-section) which is constant throughout the axial extent of the kneading rotor. More generally, throughout the claims it must be clear if "sectional shape" refers to sections taken axially, or cross-sections, or sections taken perpendicular to the flight, etc. Applicant's remarks seem to suggest that cross-sections are intended, but the language of the claims "sectional shape in the axial direction" would not convey such a meaning to one skilled in the art.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3, 5, 6, 8 and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Inoue et al. (US 5,947,593). Regarding claim 1, Inoue ('593) discloses a screw set in a twin-screw extruder comprising a rotor segment (a first segment 1b) which provide a plurality of tip clearances (those of 7a,7b,7c) different from each other in the circumferential direction, said kneading rotor having a constant sectional shape (such as the cross-sectional shape of Fig. 4) in the axial direction, and a screw segment (a second segment 1b) comprising at least one screw blade, said screw segment, except for crest portions, having the same sectional shape as said rotor segment, except for crest portions (see col. 6, line 50-col. 7 line 6; Figs. 6-8). Regarding claims 2-3, the reference discloses than multiple segments 1 may be used and that some or all

may be in the form of "disks" (see col. 3, lines 27-32). Regarding claim 5, each counterclockwise, clockwise, and parallel blades are disclosed by the reference (see col. 10, lines 37-38, Figs. 6-9). Regarding claim 6, Figs. 6-9 each disclose both clockwise and counterclockwise blades. Regarding claim 8, the set comprises two kneading blades (see col. 5, lines 20-23). Regarding claim 9, the set comprises three kneading blades (see col. 5, lines 20-23). Regarding claim 10, Inoue ('593) discloses a twin-screw extruder comprising a barrel (3) having two intercommunicating chambers (4); and a screw set (1) rotatably mounted in each of said chambers so as to mesh with one another (see col. 12, lines 1-13); each screw set comprising a rotor segment (a first segment 1b) which provide a plurality of tip clearances (those of 7a,7b,7c) different from each other in the circumferential direction, said kneading rotor having a constant sectional shape (such as the cross-sectional shape of Fig. 4) in the axial direction, and a screw segment (a second segment 1b) comprising at least one screw blade, said screw segment, except for crest portions, having the same sectional shape as said rotor segment, except for crest portions (see col. 6, line 50-col. 7 line 6; Figs. 6-8). Regarding claim 11, the rotor segment provides tip clearances different from each other in the axial direction (see col. 3, lines 27-32; Fig. 1).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1723

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. (US 5,947,593). As stated above Inoue ('593) discloses all three types of blades. While Inoue ('593) does not explicitly disclose specific segment have all three blades, it is considered that the embodiment of Fig. 12 together with col. 10, lines 37-38 would have suggested to one of ordinary skill in the art to include all three types in a segment.

Response to Arguments

11. Applicant states "[t]he word 'clearance' is now limited to the claims directed to the combination of the twin screw extruder including both a barrel and screw sets".

However, claim 1 still includes the word "clearances" in line 5.

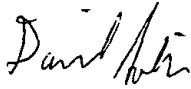
12. Applicant expressed that there is no basis for considering that portion 1a of the screw set of Inoue et al. (US 5,947,593) has the same section as portion 1b. Therefore, in the current office action, portion 1a is not relied upon.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Sorkin whose telephone number is 703-308-1121. The examiner can normally be reached on 8:00 -5:30 Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Art Unit: 1723

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



David Sorkin

December 10, 2002



CHARLES E. COOLEY
PRIMARY EXAMINER